STATE OF CALIFORNIA
State Energy Resources
Conservation and Development Commission

In the Matter of:	)	Docket No. 00-AFC-12
	)	
Application for Certification for the	)	REPLY BRIEF OF INTERVENOR THE
MORRO BAY POWER PLANT	)	COASTAL ALLIANCE ON PLANT
PROJECT	)	EXPANSION RE GROUP III TOPICS
_____	)	OTHER THAN SOIL AND WATER

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Pursuant to the Committee Order Adjusting Revised Schedule dated April 25, 2002, Intervenor The Coastal Alliance on Plant Expansion ("CAPE") hereby submits its Reply Brief re Group III Topics Other Than Soil and Water. CAPE will file a separate Reply Brief on Soil and Water Issues.

I. AIR QUALITY

A. The MBPP Will Result in Significant Unmitigated Local and Regional Air Quality Impacts and Will Not Comply With All Applicable LORS.

Contrary to Duke's key assertions, the proposed MBPP will in fact result in quite significant unmitigated adverse air quality impacts, both locally and regionally, and will not comply with all applicable LORS. These issues are discussed in fuller detail below and were addressed at great length in CAPE's Opening Brief on Group III Topics other than Soil and Water issues ("CAPE's Opening Brief III").

B. There Are Significant Unmitigated Local Air Quality Impacts From the MBPP.

Duke errs in claiming there are no significant unmitigated local air quality impacts from the proposed MBPP, based on its analysis of Best Available Control Technology ("BACT"), what it describes as its Morro Bay project-specific analysis, and its Health Risk Assessment ("HRA"). First, as to BACT issues, CAPE does not agree that SCR as opposed to SCONOx is BACT for NOx emissions for all of the reasons set forth in Section IV of the Air Quality Issues Comments to PDOC and PSA Regarding Duke Energy Morro Bay LLC, dated June 13, 2001 by Bonita Churney and Pamela Soderbeck, attached as part of Appendix C to the FDOC which is included in the FSA Part 1.[1]

[1] Exhibit 115, FSA Part 1, §3.1, Appendix A - FDOC, Appendix C.

In its response to those comments regarding BACT,[2] the APCD noted that the District had not determined that SCONOx is unfeasible, emphasizing only that the APCD determined the emission limits are BACT. Because of the existing understatement of PM emission rates (not taken into account by the ACPD), as discussed further below and extensively in CAPE's Opening Brief III (§II.A), CAPE believes the addition of particulate matter resulting from ammonia slip is significant and therefore should be eliminated by substituting SCONOx for SCR.[3]

In addition, even if the proposed MBPP were to use BACT, that does *not* mean the pollutant emissions from the plant are insignificant from an air quality and public health standpoint. As stated by the court in *Riverwatch v. County of San Diego*, 76 Cal. App.4th 1428, 91 Cal.Rptr.2d 322, 340 (1999):

> … in addition to a prohibitive standard for process emissions of PM_{10}, the APCD has a much lower standard which triggers a requirement for the use of best available current [sic] technology (BACT) for nonstationary sources of PM_{10}, such as fugitive emissions and haul road emissions. However, the BACT standards for such sources of PM_{10}, 10 pounds a day, only requires that a user employ certain technology; *the standard does not in any manner suggest what the APCD believes is a significant level of pollution. Thus, unlike a prohibitive standard, such as the one for process emissions, the BACT standard cannot be relied upon in establishing the significance or insignificance of a given level of emissions.* [Emphasis added]

Although that case involved BACT for non-stationary sources, the same principle applies to BACT for stationary sources. In a nutshell, meeting BACT requirements does not guarantee there will be no significant adverse effects on air quality and public health.

Second, Duke's so-called project-specific Air Quality Impacts Analysis (i.e., its ISC modeling) is not particularly conservative as set forth in detail in CAPE's Opening Brief III (§II.B.3.a) although it should be. Staff notes that the modeling when using appropriate parameters (which did not occur here) over-predicts actual impacts by

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[2] Exhibit 115, FSA Part 1, §3.1, Appendix A - FDOC, Appendix B, pp. B5-B6.

[3] The merits of SCR relative to SCONOx are addressed only briefly by Duke in Exhibit 4, AFC, Appendix 6.2.6. Staff does not address or analyze this issue of SCONOx vs. SCR at all in simply concluding in Exhibit 115, FSA Part 1, §3.1, p. 3.1-20 that BACT is being complied with for NOx emissions.

a factor of two.[4] The error in emission rates alone offsets that factor. Furthermore, that modeling (even if it used the correct emission rates, which CAPE disputes) shows that significant adverse health impacts will result from $PM_{2.5}$ emissions and resulting concentrations from the MBPP (*see* CAPE's Opening Brief III, §II.B.1 and the further discussion below in §I.E).

In addition to all of the issues raised in CAPE's Opening Brief III regarding the false "conservatism" of Duke's modeling, it should also be noted that there is some question as to the appropriate worst case scenario used by Duke and by the APCD in their modeling. For example, Duke's expert, Mr. Rubenstein, testified that worst case conditions for Duke's modeling of startups was two turbines in startup and two at 50% operating load.[5] Mr. Ziemer, who independently modeled the MBPP emissions using the same modeling, testified that he had modeled startup worst case conditions as two turbines in startup and two at 100% capacity (including duct firing).[6] Although PM_{10} emission rates do not vary during startups,[7] the fact that the same conclusions were reached by Mr. Rubenstein and Mr. Ziemer using different worst case assumptions for NOx, CO and VOC startup conditions demonstrates the imprecision of the ISC modeling, in general, and the need for conservatism.[8]

Another point made by Mr. Ziemer as Staff's witness (and apparently relied on by Staff in reaching its conclusions)[9] was that the modeling results were conservative because the "emissions for the existing facility were selected based on actual historical fuel use results,"[10] whereas the proposed facility modeled the maximum emissions possible.[11] That is not an indication of any "over" conservatism at all. The court in *Save Our Peninsula Committee v. Monterey County Board of Supervisors*, 87 Cal.App.4th 99, 104 Cal.Rptr.2d 326, 342 (2001) made clear that CEQA requires a

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4 Staff Opening Brief III, p. 6 (2nd ¶).
5 2/5/02 RT 237:11-21; Exhibit 4, AFC, p. 6.2-54 and Table 6.2-34, p. 6.2-55.
6 2/6/02 RT 67:7-11.
7 2/6/02 RT 67:17-20.
8 2/6/02 RT 64:7-15.
9 *See* Staff's Opening Brief III, §II, p. 6.
10 2/6/02 RT 64:21-65:6.

comparison to the actual operations of the existing facility (preexisting use), not a theoretical level of permitted operations. *See also Environmental Planning and Information Council v. County of El Dorado*, 131 Cal.App.3d 350, 357-358, 182 Cal.Rptr. 317, 321 (1982).

Duke also notes that "[e]ven when combined with existing background levels, the proposed project will not cause a new violation of any state … air quality standard."[12] However, Duke acknowledges that the MBPP will add to existing PM_{10} concentrations, which have exceeded California state standards in Morro Bay in 1997. This distinction (new violation vs. contribution-to-an-existing violation) apparently makes no difference to the Staff in its analysis.[13] If the same 3-year baseline were used for this purpose as was used for the ERCs determination (i.e., 1998-2000), there were no exceedances in Morro Bay but the modeled concentrations from the MBPP combined with the existing ambient concentrations would in fact *cause* a new violation.[14]

Finally, Duke claims that the HRA (discussed in Section II.B below) demonstrates no significant local health risks from any toxic air contaminants ("TACs"). This clearly is not true, if appropriate acrolein factors are applied. (*See also* the discussion in CAPE's Opening Brief III, §II.A.6.)

C. There Are Significant Unmitigated Regional Air Quality Impacts From the MBPP.

Again Duke is wrong in its claims that there are no significant unmitigated local air quality impacts from the MBPP, based on (1) BACT, (2) what Duke described as the Morro Bay project-specific cumulative Air Quality Impacts Analysis (i.e., its ISC modeling results applied to the ambient concentrations in Morro Bay), and (3) use of emission reduction credits ("ERCs"). As noted above, CAPE disagrees that BACT is in fact being used but even if it were, that does not address the significance of air quality impacts of the Project. As also discussed above, whether the MBPP causes a new

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11 2/6/02 RT 65:7-66:8.

12 Duke's Opening Brief III, §I.B, pp. 3-4 (1st ¶).

13 2/6/02 RT 94:21-95:24; 100:24-101:9.

violation of state PM_{10} standards or contributes to an existing one depends on the baseline years used for the calculation, but Staff does not treat these two situations any differently for mitigation purposes.

1. The Cumulative Regional Impacts Analysis Is Inadequate in Too Narrowly Constraining Its Analysis to Projects Within a 6-Mile Radius of the MBPP.

Duke also notes that it prepared a protocol for evaluating cumulative impacts that includes projects not yet in operation, but found no such "sources within a six-mile radius of the project that would result in any potential cumulative impacts with the project. (Exh. 115, 3.1-19 and Appendix A, p. 8)."[15] This cumulative impacts analysis

on its face is wholly inadequate.

According to the FSA Part 1, the Staff provided the Applicant with a modeling protocol that required the Applicant to include modeling of all known future projects that emit more than five tons per year of air emissions within six miles of the proposed facility.[16] Staff concludes that there were no such planned facilities so there is no cumulative impact assessment.

This is yet another example of Staff applying a rigid protocol to a CEQA analysis that requires specific and thoughtful individualized consideration.[17] Although CEQA Guidelines § 15064.7(a) encourages each public agency to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects, these thresholds are not absolute. "A threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect, noncompliance with which means the effect will *normally* be determined to be significant by the agency and compliance with which means the effect *normally* will be

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[14] Exhibit 139, Soderbeck Declaration, Attachment A - Children's Report, p. 10, note 15.

[15] Duke's Opening Brief III, p. 3-5 (2nd ¶). The reference to Appendix A is unclear in that the FDOC itself is Appendix A to the FSA Part 1, §3.1, but it does not address this issue on page 8; nor does Appendix A to the FDOC.

[16] Exhibit 115, FSA Part 1, §3.1, p. 3.1-8.

determined to be less than significant." [Emphasis added] The courts have made it quite clear that CEQA Guidelines must be interpreted "to afford the fullest possible protection to the environment." *Kings County Farm Bureau v. City of Hanford*, 221 Cal.App.3d 692, 720, 270 Cal.Rptr. 650, 662 (1990); *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus*, 27 Cal.App.4th 713, 735, 32 Cal.Rptr.2d 704, 717 (1994); *San Franciscans for Reasonable Growth v. City and County of San Francisco*, 151 Cal.App. 3d 61, 74, 198 Cal.Rptr. 634, 640 (1984) (applying this specifically to "formulating the list of projects to be considered in each cumulative analysis").

At least as to so-called "regional" pollutants, like PM_{10} and $PM_{2.5}$,[18] artificially limiting the analysis to emission sources within 6 miles of the MBPP makes no sense. The point at which increased pollutant levels on a cumulative basis may be significant under CEQA cannot be a standardized, fixed point. CEQA Guideline § 15064(b) states that: "An ironclad definition of significant effect is not always possible because the significance of an activity that may not be significant in an urban area may be significant in a rural area." This was echoed by the court in *Berkeley Keep Jets Over the Bay Committee v. Board of Port Commissioners*, 91 Cal.App.4th 1344, 111 Cal.Rptr.2d 598, 625 (2001) ("*Berkeley Jets"*) in the context of emphasizing a site-sensitive threshold of significance for noise.

There is absolutely no evidence that $PM_{2.5}$ emissions, for example, disperse no further than six miles. Quite the contrary – Staff notes that $PM_{2.5}$ particles may have long lifetimes in the atmosphere and travel hundreds to thousands of kilometers.[19] While there may be no other anticipated projects within a six mile radius of the MBPP, there are numerous other power plant facilities in the permitting process or recently permitted but not yet built and operational within "thousands of kilometers" of

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[17] *See, e.g.,* CAPE's Opening Brief II, §II.C.4, pp. 21-23 (re use of 5 dBA increase as standard for noise significance).

[18] *See, e.g.*, Mr. Rubenstein, 2/15/02 RT 161:19-21;Mr. Badr 2/6/02 RT 97:16-98:5; 3/12/02 RT 47:9-23. For purposes of construction air quality impacts, Duke prefers to label PM_{10} as being a very localized impact only. *See* the discussion below in §I.E.

[19] Exhibit 115, FSA Part 1, §3.4, Appendix A, p. 3.4-17 (3rd ¶).

the MBPP.[20] The cumulative impacts analysis should have taken these projects, all of which have significant $PM_{2.5}$ emissions, into account.

The court in *Kings County, supra,* discussed in detail the adequacy of an EIR for a relatively small cogeneration power project (24.6 MW) in Hanford, California, regarding cumulative impacts on air quality. CEQA Guideline § 15355 states:

> "Cumulative impacts" refers to two or more individual effects which, when considered together, are considerable or which compound or increase the other environmental impacts.
>
> (a) The individual effects may be changes resulting from a single project or a number of separate projects.
>
> (b) The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

See also CEQA Guidelines §§ 15065(c), 15130.

The *Kings County* court went on to describe the purpose of the cumulative impacts analysis as follows:

> "One of the most important environmental lessons evident from past experience is that environmental damage often occurs incrementally from a variety of small sources. These sources appear insignificant, assuming threatening dimensions only when considered in light of the other sources with which they interact. Perhaps the best example is air pollution, where thousands of relatively small sources of pollution cause a serious environmental health problem." [Citation omitted]

[20] It is respectfully requested that the Committee take official administrative notice of the pending and/or recently approved applications for certification of new power generation facilities at La Paloma (1048 MW), Midway-Sunset (500 MW), Elk Hills (500 MW), Sunrise (320 MW) and South Star (200 MW), all located in western Kern County near the San Luis Obispo County line, as well as Avenal (600 MW) and Henrietta Peaker (91.4 MW), located in western Kings County near the San Luis Obispo County line, and Central Valley (1060 MW) located in Fresno County. All of these facilities are well within "thousands of kilometers" of the proposed MBPP.

221 Cal.App.3d 692, 720, 270 Cal.Rptr. 650, 662. *See also Los Angeles Unified School Dist v. City of Los Angeles ("LAUSD")*, 58 Cal.App.4th 1019, 1025, 68 Cal.Rptr.2d 367, 371 (1997) (in the context of cumulative noise impacts).

The *Kings County* case is likewise very instructive here in that it addressed the appropriate scope of the cumulative impacts analysis under CEQA. There the California Air Resources Board ("CARB") had suggested the EIR analysis of cumulative air impacts should encompass the entire San Joaquin Valley Air Basin, but the EIR in fact addressed only the mid-valley area. This difference was potentially quite significant in that some 116 more cogeneration projects were planned for the valley but the mid-valley EIR addressed only 30 such projects in its cumulative impacts analysis.

The court in *San Franciscans for Reasonable Growth, supra,* held it was an abuse of discretion not to include unbuilt projects which were under review in the cumulative impacts analysis under CEQA. In citing this case, the court in *Kings County, supra,* stated:

> The primary determination is whether it was reasonable and practical to include the projects and whether, without their inclusion, the severity and significance of the cumulative impacts were reflected adequately. (151 Cal. App.3d pp. 74-77, 198 Cal. Rptr. 634 [640-642].) "The disparity between what was considered and what was known is the basis upon which we find an abuse of discretion." (*Id.*, at p. 77, 198 Cal.Rptr. 634 [642].]
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> "… [I]t is vitally important that an EIR avoid minimizing the cumulative impacts. Rather it must reflect a conscientious effort to provide public agencies and the general public with adequate and relevant detailed information about them. (CEQA, § 21061.)" (*Id.* at p. 79, 198 Cal.Rptr. 634 [643].)

221 Cal.App.3d 692, 270 Cal.Rptr 650, 664. As was the court's inference in *San Franciscans for Reasonable Growth, supra*, CAPE likewise infers the only reason for the Staff's and Duke's

> … failure to consider and analyze this group of projects was that it was more expedient to ignore them. However, expediency should play no part in the agency's efforts to comply with CEQA. Finally, given the Commission's easy access to other information and the fact that its analytical process is unaffected by the size of the project list, the inclusion of these projects was more reasonable

> than their exclusion, especially in light of the particular language of section 15023.5 or the Guidelines …[now CEQA Guideline § 15065(c)]

151 Cal.App.3d 61,74-75, 198 Cal.Rptr. 634, 640. The Staff has the requisite data available to it from all of the power plant projects before it and could make the requisite analysis of cumulative regional $PM_{2.5}$ impacts from the MBPP and all such other projects. Staff could and should have required Duke to use that data to perform regional modeling of $PM_{2.5}$. The FSA is incomplete and inadequate without that analysis.

As in *Kings County*, Staff as lead agency knew regional impacts of $PM_{2.5}$ could have quite significant adverse effects on air quality and human health and likewise knew or should have known that it is vital to assess the impact of similar energy development in the broader region.[21] In *King's County, supra*, the court noted that the "record reflects that the various air pollution control districts could supply the information regarding similar projects in the basin." 221 Cal.App.3d 692, 270 Cal.Rptr. 650, 664. Here the Staff itself already has that information for every power plant that has applied for a permit to operate.[22]

The court in *Kings County, supra*, then went on to find:

> Because the record does not provide information regarding similar energy developments in the San Joaquin Valley air basin, the agency could not, nor can we, determine whether such information would have revealed a more severe impact. Accordingly, the EIR is inadequate. To conclude otherwise would place the burden of producing relevant environmental data on the public rather than the agency and would allow the agency to avoid an attack on the adequacy of the information contained in the report simply by excluding such information.

221 Cal.App.3d 692, 270 Cal.Rptr. 650, 664. *See also Save Our Peninsula, supra*, 87 Cal.App.4th 99, 104 Cal.Rptr.2d 326, 343 (2001) (burden on preparers of EIR to conduct investigation).

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[21] The concerns of CARB as to the highly significant adverse health effects from increases in $PM_{2.5}$ exposure is quite evident throughout the CARB Draft Report (Exhibit 184).

[22] This does point out, however, that any particular APCD will not necessarily have all of the data on projects in neighboring air districts and certainly not have the authority to act with respect thereto. The APCD's analysis is regional within the particular district. Only the Staff can address this broader cumulative impacts analysis under CEQA.

Similarly, the burden is not on CAPE, representing the local resident stakeholders, to provide the data regarding a cumulative air analysis of all regional power plant projects that cumulatively impact, along with the MBPP, the $PM_{2.5}$ air quality of the region.[23] Staff must analyze and require the Applicant to provide the requisite data for modeling cumulative regional impacts resulting from all of the new power plant projects. The FSA Part 1 is thus inadequate in this regard.

Nor can this problem be dismissed simply by a finding that all of the other projects will be providing ERCs. The ERCs for each project may not have the actual result of lowering regional emissions, for example, if the original ERC sources do not have the same mix and dispersion patterns as the combustion $PM_{2.5}$ from the various power plant projects. It is, however, the actual adverse health impacts that must be analyzed under CEQA. The shortfalls of ERCs is discussed further below.

2. The ERCs Being Provided Are Inadequate for Regional Mitigation of the Significant Adverse Air Quality Impacts From the MBPP.

The subject of the inadequacy of the ERCs for regional (as well as local) mitigation of the significant adverse air quality and public health impacts from the MBPP are discussed at some length in CAPE's Opening Brief III (§II.C.1-5, pp. 36-45) and will not be repeated here. To summarize, the ERCs to be obtained by Duke for the MBPP are insufficient: (by at least half) because of the significant understatement of actual $PM_{2.5}$ emission rates; because of the use of an inappropriate baseline (including 2000); because of inclusion of paper mitigation (relating to the 1995 cessation of oil burning); and because of actual increases in local $PM_{2.5}$ concentrations, regardless of the ERCs. It is clear, as set forth in CAPE's Opening Brief III, that neither the District witness nor Staff "soundly refuted CAPE's conclusion that additional PM_{10} ERCs are required at this time."[24]

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[23] The fact that the proposed projects at issue here are in at least three different counties only makes it more important for Staff to do a complete CEQA analysis. $PM_{2.5}$ emissions and resulting concentrations do not pay heed to county or air district borders any more than they do a 6-mile radius.

[24] Staff's Opening Brief III, §I, p. 3 (1st ¶).

Contrary to the Staff's contentions, the District's imposition of a wholly unrealistic PM emission rate cap does not protect against the significant adverse health impacts of the deadly $PM_{2.5}$ emissions and resulting concentrations, because the limit is not feasible in a true sense of the word. Nor can it be found that the unrealistically low emission limits are protective insofar as they are measurable because there are significant technological limitations on monitoring and source testing of $PM_{2.5}$, especially if Duke succeeds in applying the inappropriate source test methodology proposed by Mr. Rubenstein.[25]

Ironically, Staff notes the District has never required PM monitoring for gas-fired projects before this Project. That makes it less (not more) likely that the District has sufficient experience in PM_{10} monitoring and source testing to be confident that the specified emission rate caps can be met here. Mr. Willey, from the APCD, himself states:

> "[N]o, we have never really required particulate source testing for gas-fired projects. And that's part of the reason why there's not a lot of data out there for natural gas fired particulate testing. We run into the situation where we have conflicting data. There's just not a large volume of information out there but there are on other pollutants.[26]

That hardly inspires a great deal of confidence or assurance that there will be no significant adverse health effects from the $PM_{2.5}$ emitted by the MBPP. This situation warrants more conservatism, not less.

Staff goes on to argue that the APCD and Staff will have further opportunity to review "accurate information about the actual level of project PM_{10} emissions during commercial operation,"[27] and that the District and the Commission

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[25] CAPE's Opening Brief III, §II.A.4-5, pp. 7-14. Mr. Rubenstein's proposal to use EPA Method 8, which is only approved for measuring sulfates, drastically understates actual condensible PM_{10} and varies significantly from the actual EPA approved condensible particulate Methods 17 and 202. Specifically, the impingers used in Mr. Rubenstein's proposed methodology do not contain the same substances (isopropyl alcohol vs. distilled water), nor are the same number of impingers analyzed. 2/6/02 RT 10:3-15; 17:6-18:1; 24:14-22; Exhibit 147, Mr. Rubenstein's research paper on "Sources of Uncertainty When Measuring Particulate Matter Emissions from Natural Gas-Fired Combustion Turbines."

[26] 3/12/02 RT 52:11-18.

[27] Staff's Opening Brief III, §I, p. 4 (1st ¶).

retains significant enforcement powers to correct any problem if the permit limitation in fact proves difficult to meet. Again this is simply inadequate to assure there are no unmitigated significant adverse health effects from the MBPP $PM_{2.5}$ emissions and resulting concentrations.

First, if a real, substantive evaluation of these adverse impacts is not made by Staff and the Commission in connection with the initial approval of the Project, there is a violation of CEQA. Public Resources Code § 21081 and CEQA Guidelines § 15091(a) require an agency to make findings for *each* significant environmental effect. *Citizens for Quality Growth v. Mount Shasta,* 198 Cal.App.3d 433, 444, 243 Cal.Rptr. 727, 733 (1988). CEQA does not allow deferral of this determination until the MBPP has been built and the initial pre-operation source test will occur. Nor does CEQA permit chopping up a project into small discrete pieces (like $PM_{2.5}$ air emissions) for separate later consideration on the eve of commercial operation. *See, e.g., Kings County, supra,* 221 Cal.App.3d 692, 270 Cal.Rptr. 650, 659-660.

The California Supreme Court in *Laurel Heights Improvement Ass'n of San Francisco v. Regents of the University of California,* 47 Cal.3d 376, 395, 253 Cal. Rptr. 426, 433 (1988) (*"Laurel Heights I"*) noted in relevant regard: "… the later the environmental review process begins, the more bureaucratic and financial momentum there is behind a proposed project, thus providing a strong incentive to ignore environmental concerns that could be dealt with more easily at an early stage of the project." This is equally true here if the original source tests in fact showed the emission rates were unrealistic, after the entire Project was built and otherwise ready to operate.

The APCD would be under enormous pressure to grant variances (likely with cash penalties only) for exceedances until the caps were being met (even though in theory the District could issue an abatement order). Such cash fines do nothing to alleviate the actual adverse impacts of $PM_{2.5}$ exposures in the meantime. Moreover, any rule making changes to require more stringent caps can take years and are typically

phased in over a lengthy period of time.[28] CAPE has no doubt that further tests (whether using appropriate methods or not) would be done until the permit levels appeared to be met. However, as noted above and set forth in CAPE's Opening Brief III, until highly accurate continuous monitoring systems are required for $PM_{2.5}$ emissions from the MBPP, there can be no assurance that emission levels are being met at all times.

D. Duke, Staff and the District Are in Error in Finding No Significant Unmitigated Air Quality Impacts From the MBPP.

Duke emphasizes that the District, Staff and Applicant all agree that there are no significant unmitigated impacts from the MBPP and that the Project complies with all applicable LORS. However, this is not a matter to be determined by popular vote. CAPE, in its Opening Brief III and this Reply Brief, points out substantive evidence of a number of ways in which all three entities are mistaken on this issue.

As to the District's conclusions, it should be emphasized that the FDOC states only that the equipment proposed for the MBPP "has *the capability* of complying with all applicable *District rules and federal requirements for which the District has EPA delegation."* [Emphasis added][29] The District does not make CEQA determinations in any event; nor does it take into account project goals and objectives such as "improved air quality."[30]

Duke appears to be using the "backward" and false logic that because the MBPP's concentrations will not be detected by the air monitoring (i.e., violations cannot be caught), there will be no violations. This flawed reasoning must be rejected by the Committee. As discussed extensively in CAPE's Opening Brief III (§II.A.5), the limitations inherent in the APCD's PM monitoring in Morro Bay are the reason for the non-detection of any change between the emissions from the existing plant and the new MBPP's operations.[31] These technological limitations were noted by Ms. Soderbeck[32]

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[28] Mr. Willey, 3/12/02 RT 26:15-27:5; 32:2-33:5. *See also* APCD Rule 429 as an example of APCD phase-in limits.

[29] Exhibit 115, FSA Part 1, §3.1, Appendix A - FDOC, p. 16.

[30] Mr. Willey, 3/12/02 RT 27:6-10.

[31] 2/5/02 RT 196:15-22; 221:8-222:4; 2/6/02 RT 61:12-62:2; 3/12/02 RT 50:23-51:3.

and Mr. Rubenstein, who indicated that even a 10 $\mu g/m^3$ increase in 24-hour average PM_{10} would not be detectable on the Morro Bay monitors or even the best monitor available unless there were no other ambient PM_{10}.[33] This in no way evidences the absence of unhealthful impacts from the non-detectable $PM_{2.5}$ concentrations resulting from the MBPP. Quite the contrary. The literature on PM_{10} health impacts makes it quite clear that very serious adverse health impacts occur from even a 24-hour 1 $\mu g/m^3$ increase in PM_{10} let alone a 10 $\mu g/m^3$ increase,[34] which is what Duke's modeling shows here.[35]

The Staff's overall conclusion that with the proposed Conditions of Certification ("COCs") the MBPP will meet all applicable air quality requirements and will not cause any significant air quality impacts is likewise in error, as detailed by CAPE in its Opening Brief III. In addition to CEQA noncompliance resulting from the unmitigated significant adverse air quality impacts, other local LORS were not addressed by Staff or Duke at all. *See* the discussion of the City of Morro Bay's General Plan LU 40.17 and CLUP Policy 5.22 in CAPE's Opening Brief III (§II.D.2) and below in Section II.

Finally, the spotty, inconsistent and contradictory evidence put forth by the Applicant on air quality issues does not constitute substantial evidence in the record supporting a conclusion that the MBPP will not result in any significant unmitigated adverse impacts and complies with all applicable LORS. The CEQA definition of substantial evidence is set forth in Guideline § 15384(a) and means "enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached." *See Laurel Heights I, supra,* 47 Cal.3d 376, 393, 253 Cal.Rptr. 426, 431; *Friends of the Old Trees v. California Dept. of Forestry & Fire Protection*, 52 Cal.App.4th 1383, 1397, 61

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[32] 3/12/02 RT 148:12-149:3.

[33] 2/5/02 RT 221:8-222:4.

[34] Exhibit 139, Soderbeck Declaration, Attachment A - Children's Report and Attachment B - Other Impacts Report; Exhibit 184 - CARB Draft Report.

[35] Mr. Rubenstein, 2/6/02 RT 3:10-17.

Cal.Rptr.2d 297, 308, n. 8 (1997) ("*Old Trees*").[36] Substantial evidence included facts, reasonable assumptions based on fact, and expert opinion supported by facts. On the other hand, "[a]rgument, speculation, unsubstantiated opinion or narrative, evidence which is clearly inaccurate or erroneous, is not substantial evidence." Pub. Resources Code

§ 21082.2(c).

In the air quality area, Duke has provided nothing but argument, unsubstantiated expert opinion and inaccurate, erroneous and misleading testimony by Mr. Rubenstein and opinion unsupported by facts from Dr. Walther on rebuttal. As only a few examples, Mr. Rubenstein first indicated that the critical PM_{10} emission rates were based on vendor data, only to renege and thereafter claim the rates came not from that data but from the combined filterable and condensible particulate emissions measured using EPA-approved test methods. Mr. Rubenstein's own testimony confirmed this methodology was *not* EPA approved for measuring condensible particulates. His testimony then became that the critical emission rates came not from any of those sources, but from his own professional judgment. The hard facts, however, do not support that "professional engineering judgment." Vendor data and existing source tests on the very same model of turbine elsewhere using actual EPA-approved methods show emission rates much higher than those specified by Mr. Rubenstein.[37]

E. The Proposed COCs Are Not Sufficient to Assure Mitigation of All Significant Adverse Air Quality Impacts From the MBPP.

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[36] In *Old Trees, supra*, the court also noted the reliance by various public commenters on a paper written by a student (an unpublished thesis) which was a compilation of scientific research regarding the phenomenon of drip fog, of relevance in that case. The court stated: "While it is true, as our dissenting colleague points out, that the Harris paper did not specifically address the site under review, it nevertheless added credence to the concern repeatedly raised by the public that the proposed logging had the potential of further reducing ground water that was already in short supply." 52 Cal.App.4th 1383, 1398, 61 Cal.Rptr.2d 297, 309. The court further noted the agency's study made the same basic points set forth in the student paper. Here, the compilations of scientific research on the severe adverse health effects associated with increased exposures to PM_{10} and $PM_{2.5}$ (Exhibit 139, Soderbeck Declaration, Attachments A and B) were agreed by all parties to be accurate assessments of that literature, with the only disagreement between the parties relating to the application of those studies' results to the specific MBPP Project's emissions. As set forth in great detail in CAPE's Opening Brief III (§II.B.4), the application of that research to this Project is in fact warranted and there is no substantial evidence to the contrary. Dr. Walther's rebuttal arguments are belied by the facts. *See* §II.F below.

Duke and Staff both note their agreement on the proposed COCs set forth in the FSA Part 1 (§3.1).[38] Duke first explains in detail its opposition to the requirement for ambient monitoring of NO_2 and PM_{10} during Project construction in **AQ-C3**, before agreeing to the solution of using the mobile monitor. This opposition is nonetheless enlightening as it relates to various other air quality issues addressed by CAPE below and in its Opening Brief III. In this context, Duke seems to be arguing that because the highest PM_{10} impacts are located "almost exclusively within the confines of the PG&E substation at the Morro Bay Power Plant,"[39] there can be no significant impacts associated with these emissions, i.e., that PM_{10} emissions are strictly localized. In virtually every other context, Duke argues instead that PM_{10} impacts are inherently regional in nature.[40]

Duke also reiterates that the potential construction PM_{10} impacts are temporary, grossly overstated due to conservative modeling assumptions and not measurable, except possibly within the PG&E substation. Again, these points are either incorrect or irrelevant.[41] First, the construction impacts will occur for at least 21 months (with additional impacts extending through the 3-year demolition phase).[42] Because all the evidence supports the finding of adverse health impacts from increased PM_{10} exposure, even for a 24-hour period, substantial and severe health consequences will occur from a 5-year exposure to the increased construction PM_{10}.

As addressed in detail in CAPE's Opening Brief III (§ II.B.3.a), Duke's modeling is not as conservative as Duke would like the Committee to believe and does not "grossly overstate" the realistic levels of pollution. Even if the modeling were to overstate actual concentrations by a factor of two (as noted by Staff and its witness, Mr.

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37 *See* CAPE's Opening Brief III, §II.A for further discussion and citations to the record.

38 *See* Duke's Opening Brief III, §I.E, p. 3-7; Staff's Opening Brief III, §I, p. 2.

39 Duke's Opening Brief III, p. 3-8, lines 6-7.

40 *See, e.g.*, Duke's Opening Brief III, p. 3-11, 1st ¶; RT

41 The issue of measurability has been addressed by CAPE elsewhere (*see* §I.D, *supra*) and will not be further discussed here.

42 Exhibit 58, Figure 1-7A (Project Schedule of Activities Revised Demolition Schedule).

Ziemer),[43] the levels included in Mr. Rubenstein's testimony[44] remain quite significant for adverse health outcomes resulting from exposures to PM_{10}. Figure 1 attached to Mr. Rubenstein's Prefiled Testimony demonstrates modeled annual average PM_{10} (apparently based only on the year 1995 meteorological data) that would extend well beyond the plant and the PG&E substation at levels of 1 to 2 μgm^3. Even increases half that size when added to the ambient PM_{10} concentrations will have severe adverse health impacts, including premature mortality.[45] Worse, the 24-hr highest second highs (again, these are not even the highs) reflected in Figure 2 demonstrate 24-hr increases of between 5 and 15 μgm^3 in PM_{10} in areas outside the plant and the PG&E substation.[46] This demonstrates that PM_{10} increases at even half the size projected by Duke will result in substantial adverse health consequences.

Any supposed conservatism built into the modeling likewise is countered by the lack of any consideration of recirculation of the PM_{10} and multi-hour effects.[47] First, the modeling already assumes all required mitigation measures are used, such as diesel filters. There is a further problem related specifically to modeled construction emissions, i.e., the actual combination and schedule of specific equipment components emitting PM_{10} is only a "best" guess by Duke based on Duke's "preliminary construction schedule." It is not a worst case estimate. As noted in CAPE's Opening Brief II (§II.C.1, p. 9), the construction usage factors used by Duke's experts appear to be highly suspect.[48]

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[43] Staff's Opening Brief III, § II, p. 6; 2/06/02 RT 71:7-9.

[44] Exhibit 134, Duke's Prefiled Testimony, pp. 123, 132-133; Mr. Rubenstein 2/15/02 RT 164:2-166:22.

[45] Exhibit 139, Hartman Declaration, Soderbeck Declaration and Attachment A - Children's Report and Attachment B - Other Impacts Report; Exhibit 182, Levy and Spengler, "Modeling the Benefits of Power Plant Emission Controls in Massachusetts," *J Air Waste Manage Assoc* 2002; 52:5-18 ("Levy and Spengler"), pp. 10-11; Exhibit 184, the CARB/OEHHA Public Review Draft of the Review of the California Ambient Air Quality Standards for Particulate Matter and Sulfates, dated November 30, 2001 (the "CARB Draft Report").

[46] For example, Lila H. Keiser Park, an area actively used by residents, including children, as well as other residential areas are shown to have increased construction PM_{10} exposures of between 5 and 15 μgm^3. See Figure 2, Duke's Prefiled Testimony, p. 133.

[47] Mr. Rubenstein, 2/5/02 RT 217:19-218:7.

[48] CAPE presumes Duke was consistent in its application of construction usage factors in modeling for noise and air quality impacts.

> For example, on Table NTA 3-2 regarding the Pile Installation Phase, Mr. Mantey uses a minuscule 0.04 construction usage factor for two auger pile installation pieces of equipment, as compared to a usage factor of 1.00 for one trencher. This is preposterous and belied by his testimony that auger pile driving activities . . . will proceed for 3-4 months.[49] Mr. Mantey further testified that unlike the intermittent "ka-thump" of traditional pile driving, the auguring method "is more of a diesel engine noise and it's continuous."[50]

A radically understated construction usage factor for the pile auguring equipment which will be used in an activity that will be going on for 3 to 4 months obviously results in understated health impacts resulting from the diesel PM_{10} exposure. Staff is not certain there will be no significant adverse PM_{10} impacts beyond the plant's borders[51] and the APCD expressed significant concerns about the construction air quality.[52]

The modeling is also understated because it was done based on an 8-hour construction day, rather than a 12-hour construction day, as was agreed to by Staff and Duke with respect to COCs **NOISE-4** and **NOISE-8**.[53] This change alone should require further modeling using the 12-hour assumption, and the modeling should include more realistic or even worst case construction usage factors.

Because of the length of the adverse construction air quality impacts and the severe consequences to human health from even a $1\mu gm^3$ increase in $PM_{2.5,}$[54] **AQ-C3** should be further amended to prohibit not only violations of state NO_2 or PM_{10} standards, but any exceedance of PM_{10} above ambient levels recorded at the existing Morro Bay monitoring station located in central Morro Bay. This would assure that "dirty" construction activities would be curtailed so that Duke's claims of no adverse impacts beyond the plant's facilities and the PG&E substation would in fact occur. Finally, CAPE reiterates its position on minor additions to **AQ-C1** set forth in CAPE's

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49 1/30/02 RT 29:18-30:20.
50 1/30/02 RT 27:20-28:11.
51 Mr. Badr, 2/6/02 RT 90:20-91:6.
52 Mr. Willey, 3/12/02 RT 39:17-41:5.
53 Mr. Badr, 2/6/02 RT 91:24-92:18.

Opening Brief III (§ II.C.6). CAPE's position on its proposed new conditions relating to mitigation of significant adverse air quality and public health impacts is discussed further below in Sections II.E and G (after duct firing and public health issues are addressed in greater detail).

F. The City's Request to Revise the Air Quality Conditions of Certification Is Misleading And Should Be Denied.

Intervenor The City of Morro Bay has requested changes to virtually every **AQ** COC in its Opening Brief III, ostensibly to give the City the right to "review and comment" on the various "plans and reports" in the **AQ** COCs. This is misleading, at best. In fact, the City seeks nothing less than wholesale revision of the **AQ** COCs to provide the City with substantive approval and modification authority over dozens of highly technical and specialized air quality conditions and requirements for the project. CAPE has several objections to this. First, the City has taken absolutely no role and has shown no interest in air quality issues relating to the MBPP to date. It has repeatedly deferred entirely to the APCD despite significant local adverse impacts not addressed by the APCD's regional ERC program and despite repeated requests by CAPE members and other residents of Morro Bay that the City take a more active role in air quality issues.[55]

Second, the City has demonstrated absolutely no expertise nor any knowledge in the air quality area that would qualify it to pass judgment on critical issues of local air quality concern. It has never retained experts in air quality and, indeed, presented no evidence whatsoever, whether expert or otherwise, on air quality issues at the hearings.

Third, what the City is requesting in its amendments to the **AQ** COCs is much more than simply "review and comment" on the various "plans and reports," as it misleadingly suggests to the Committee in its Opening Brief III. The City is also seeking, for example, the right to comment on and to modify the source testing protocols (**AQ-17**);

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[54] Exhibit 139, Hartman Declaration and Soderbeck Declaration (Including Attachments A and B); Exhibit 184, the CARB Draft Report; Exhibit 182, Levy and Spengler.

to approve ambient air monitoring plans and location of ambient air monitors (**AQ-7**); to make a scientific determination whether the air quality monitoring meets all requirements determined to be equivalent to those contained in the APCD's "Guidelines for Ambient Air Quality and Meterological Monitoring," dated March 1993 (**AQ-7**); to approve the length of pre-combustion monitoring (**AQ-7**); to approve extensions of the duration of ambient air quality monitoring (**AQ-7**); to develop air monitoring protocols (**AQ-7**); to approve air monitoring parameters (**AQ-7**); to approve reports submitted by the owner-operator relating to ambient air quality readings, maintenance and calibration of the monitoring stations (**AQ-7**);to review and comment on the type, specifications and location of continuous emission monitors (CEM) for the gas turbine units (**AQ-3**); to approve Duke's surrender of emission offsets (**AQ-6**); to approve any offsite gas metering system that will provide fuel to the new gas turbines (**AQ-9**); to approve the rust like particulate plan (**AQ-10**); to approve the Startup Commissioning Plan (**AQ-11**); to approve Quarterly Reports, CEM data, fuel consumption data, operational loads, startup/shutdown times and emission factors (**AQ-24**); and to approve a CEM performance test and Relative Accuracy Test Audits (RATA) on the CEMs (**AQ-31**).[56]

The City has failed to present any evidence whatsoever demonstrating that it has the competence and ability, including the scientific and technological background, knowledge and expertise required to intelligently review and approve any of the foregoing highly specialized and technical air quality requirements. Nor has the City presented any evidence whatsoever demonstrating any need for the City to have approval and modification authority over these very important air quality functions and protocols. The APCD, unlike the City, has the expertise and, under the law, is the proper agency to provide oversight of these matters. To allow the City to insert itself into these key decisions, about which it knows nothing, would be to invite disaster for the Project and for ongoing air quality monitoring, and would simply add another level of uninformed

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[55] If anything, CAPE has been the Intervenor most actively looking after the air quality and public health impacts on local Morro Bay residents, not the City, and thus most qualified to take on a true "review and comment" role.

bureaucracy to the already established procedures and protocols developed by Staff, the APCD and Duke. CAPE urges the Committee to deny this unnecessary and dangerous request by the City to modify the **AQ** COCs.[57]

G. Duct Burning Contributes to the Significant Unmitigated Air Quality and Public Health Impacts From the MBPP.

Duke denies that duct burning at the MBPP will result in any significant unmitigated air quality impacts. This is unsupported by the facts. As addressed in CAPE's Opening Brief III (§II.C.7), the production of the additional 168 MW in capacity from duct burning compared to 168 MW in capacity at baseload operation levels results in a disproportionately higher amount of PM_{10} emissions, as agreed by the APCD.[58] Duke's argument is based on PM_{10} emissions on a mmBtu/hr basis. The relevant point for air quality considerations, however, is not how much PM results per unit of fuel burned, but the level of pollutants per MW produced. Duct firing is less fuel efficient and uses more natural gas, thus producing more $PM_{2.5}$ emissions per MW of capacity. Duke is not in the business of burning fuel just to burn fuel; the MBPP is in the business of producing electricity. The last 168 MW from the MBPP as proposed are just too costly when it comes to the disproportionately higher $PM_{2.5}$ emissions that result from producing the duct fired 168 MW.

Another "argument" (claimed to be evidence) used by Duke to support its desire to have massive duct burning at the MBPP is that "duct burning is a well-established industry practice." So are coal burning and nuclear plants. The use of duct burners at some locations does not mean there can be no significant adverse air quality or public health impacts resulting from the use of duct firing, especially with the massive

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[56] City of Morro Bay's Opening Brief III, pp. 7-16.

[57] The Committee should consider, for example, the ramifications for the Project should the City, through ignorance or incompetence (or both), unreasonably withhold its "approval" of any of the above-noted Project requirements, the delays that might result, how the City's uninformed judgment may impact regional air quality decision making, and the potential legal consequences of these actions.

[58] Mr. Willey, 3/12/02 RT 30:10-31:7.

duct burners (each rated at 426 mmBtu/hr) proposed for the MBPP. Each proposed project has to be evaluated on its own merits under CEQA.

Once again Duke starts with the presumption that another separate peaker plant would be required elsewhere if duct burning is not utilized at the MBPP. There simply is no basis for that assumption,[59] particularly in light of the Commission's recently published 2002-2012 Electricity Outlook Report (February 2002).[60] A false presumption of need certainly is not substantial evidence sufficient to support an override of the significant unmitigated adverse air quality and public health effects that are attributable to duct burning.

Dirty "peaker" facilities using massive duct burning simply do not belong in every conceivable location one might choose to build a power plant. It is especially inappropriate to put duct burning in a large plant that is right in the center of a residential community. In response to a data request from CAPE, Staff confirmed that the 1200 MW MBPP would be the only power plant in California over 1000 MW with any duct burning capacity located in a densely populated community (over 10,000).[61] Thus, duct burning in these circumstances is not at all routine, as Duke would like the Committee to believe.

Duke's citation of 11 other power plant projects using duct burning[62] is also inapropos given the difference in circumstances between these projects and those of the proposed MBPP in Morro Bay. Duke offered no evidence that these other projects were at all similar to the MBPP, whether in size, components or location. It is more

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[59] *See also* CAPE's Opening Brief I, §II.D.2, pp. 33-35.

[60] CAPE requests the Committee to take official administrative notice of the Commission's own report.

[61] This Staff response dated September 12, 2001 was designated by CAPE as an Exhibit in its Prefiled Testimony on Group II Topics, Exhibit 139, but was not given an exhibit number during the hearings, despite CAPE's request that it be assigned an exhibit number and admitted. The Committee instead ordered CAPE to file supplemental information on its Group II exhibits, which included this document. CAPE timely filed its March 19, 2002 "Clarification of Intervenor CAPE's Group II Exhibits and Request That Exhibits Be Admitted Into Evidence and That Identification of Exhibit 139 Be Corrected," which attached the Staff's September 12, 2001 Data Request Response as Exhibit A. CAPE received no written objection from any party with respect to this filing, but has also received no official notice from the Committee regarding an exhibit number for this item.

[62] Duke's Opening Brief III, p. 3-11 (3rd ¶).

relevant to note the absence of duct burning at the Moss Landing Project. There is also no evidence in the record that any of the projects cited by Duke in fact included the same massive duct burners being proposed for the MBPP. In fact, the Metcalf Energy Project utilized much smaller duct burners (with a capacity of up to 200 mmBtu/hr)[63] compared to the duct burners with a rated capacity of 426 mmBtu/hr proposed for the MBPP.[64] Clearly the larger the duct burner, the more fuel used and the dirtier the $PM_{2.5}$ emissions resulting from the use of the duct burner.

The balance of Duke's arguments in Section I.F of its Opening Brief have been fully addressed in CAPE's Opening Brief III (§§II.B.3 and II.C.7), specifically with respect to Duke's understated impact of the elimination of duct firing on local $PM_{2.5}$ concentrations and the composition of $PM_{2.5}$ from the MBPP being mostly carbon, rather than sulfates as claimed by Duke's witness. CAPE assumes the reference to the PM_{10} emission rate of 13.5 lb/hr with duct burning and an incremental 2.5 lb/hr estimated as the maximum duct firing rates in Duke's Opening Brief III are inadvertent, based on an error contained in Mr. Rubenstein's Prefiled Testimony.[65] If not, the modeling which used 13.3 lb/hr for duct firing is further understated.

Finally, CAPE reiterates that with the likely significant understatement of $PM_{2.5}$ emission rates overall and the lack of any continuous monitoring ability under the proposed **AQ** COCs, the actual emission rates attributable to duct firing is at least 26.6 lb/hr with a 4.6 lb.hr incremental $PM_{2.5}$ penalty resulting from each hour of duct burning. The testimony regarding the limitations, or lack thereof, on daily duct burning by Mr. Willey on behalf of the APCD and Staff and by Mr. Rubenstein made clear that, depending on atmospheric conditions, the MBPP could potentially use duct burning 24-hours a day for some extended period of time (although not every day of the year).[66] The

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[63] *See* the September 2001 Commission Decision of the Metcalf Energy Center Application for Certification 99-AFC-3, p. 16 (1st ¶).

[64] Exhibit 115, FSA Part 1, §3.1, Appendix A - FDOC, pp. 4-5.

[65] Exhibit 134, Duke's Prefiled Testimony on Group II Topics, p. 125; 2/6/02 RT 11:2-10; Exhibit 4, AFC, §6.2.6.2.2, Tables 6.2-25 and 26, p. 6.2-42.

[66] Mr. Willey, 3/12/02 RT 60:12-61:6; Mr. Rubenstein, 3/12/02 RT 7:1-8.

modeling, however, assumed a maximum of 16 hours of duct firing during any one day.[67] This would likewise substantially increase the significant adverse health impacts resulting from the relatively dirty duct burners, especially as to the more acute effects that occur above and beyond chronic impacts.

II. PUBLIC HEALTH

A. There Are Significant Unmitigated Public Health Risks From the MBPP.

Duke argues that because the APCD, Staff and Duke all agree that there will be no significant public health risks associated with non-criteria, toxic air pollutants, these conclusions constitute substantial evidence that there will indeed be no such risks. As addressed in §I, above, erroneous and unsupported conclusions do not constitute substantial evidence for CEQA purposes. Both Duke and Staff in their Opening Briefs III discuss the adverse health impacts of both toxic air contaminants ("TACs") (including acrolein), and the health impacts from the criteria pollutants in sections addressing Public Health issues. For purposes of this Reply Brief, CAPE will follow suit.

B. There Are Significant Public Health Risks From the MBPP's TACs (Specifically From Acrolein).

Duke relies heavily on its Health Risk Assessment ("HRA") for TACs to support its assertion that there will be no significant public health risks from the MBPP's toxic air emissions. Duke again argues that its modeling used very conservative assumptions. That is exactly what is mandated in considering TACs. CAPE has already addressed in general the problems with Duke's use of the ISC-3 modeling for this Project.[68] CAPE's concern with respect to the HRA assessment is specific to the noncarcinogenic risks (primarily acute) associated with acrolein emissions.[69]

In a nutshell, the acrolein emission factor used by Duke is totally unsupported and too low by a factor of at least 3.69. Mr. Rubenstein's claimed use of

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67 Mr. Ziemer, 2/6/02 RT 67:12-20.

68 *See* CAPE's Opening Brief III, §II.B.3.a, pp. 24-28.

69 CAPE's Opening Brief III, §II.A.6, pp. 14-19.

the CATEF emissions factor for acrolein is simply untrue. The figure used by Duke was creatively derived *in a downward adjustment* from the actual CATEF factor of 6.43 x 10^{-3}, despite CARB's considered opinion that the actual CATEF factor is *a minimum*, with upward adjustments being appropriate, but not downward adjustments. As discussed in CAPE's Opening Brief III (§II.A.6, p. 16), Mr. Rubenstein, on behalf of Duke, based his decision to cut the CATEF emission factor by almost a factor of 4 on the basis that only one of the four source tests used in deriving the CATEF figure was based on a Frame 7 turbine. However, the source test relied on by Mr. Rubenstein was conducted on a *75 MW* GE turbine, not a *180 MW Frame 7* turbine, as alleged by Mr. Rubenstein.[70] Clearly there is no basis in fact to support this attempt by Duke to shortcut the public health protections required by CEQA.

Using the actual CATEF emission factor for acrolein would result in an HRA showing acute noncarcinogenic risks from the MBPP in excess of 1 in a million, which would stop the Project altogether under APCD Rule 219. Furthermore, the CATEF factor does not address the increases in acrolein emissions during startup conditions when the oxidation catalyst is not involved in controlling those emissions. The Committee should not downplay the nature of the adverse health impacts caused by acrolein, which are both acute and chronic[71] eye irritation. CAPE is confident that no resident of Morro Bay wants to deal routinely with burning and/or watery eyes.

The emission factor used by Duke is not supported by either the Pasadena, Texas acrolein tests on a similar sized turbine, or the actual CATEF emission factor and is inconsistent with Mr. Rubenstein's own views of an appropriate acrolein emission factor in other power plant project proceedings where use of the actual CATEF factor did not lead to a significant impact.[72] The Committee should not ignore this obvious and blatant manipulation of emission factors by Duke to get the answer it needs

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[70] *See* Metcalf Energy Center, CVRP Data Requests and Responses - Set 3 (Supplemental) (99-AFC-3), December 15, 2000, of which CAPE requests the Committee take official administrative notice.

[71] Dr. Walther, 2/6/02 RT 47:17-18; Exhibit 4, AFC, Appendix 6.2-4.

[72] *See* San Joaquin Valley Energy Center AFC, Table 8.1B-7 and Inland Empire Energy Center AFC, Table K-9-1, of which CAPE requests the Committee take official administrative notice.

to go forward with this Project, as opposed to a project that will not cause significant acute noncarcinogenic effects. Such a changeable position by an "expert" cannot constitute substantial evidence. This also amply exposes the fallacy of Duke's claim of conservatism in the assumptions used in its HRA. CEQA demands that the public health of the community's residents be protected. Until such time as Duke can in fact demonstrate no significant acute noncarcinogenic effects from the MBPP using appropriate acrolein emission factors, the Project should be denied approval.

C. There Are Significant Unmitigated Adverse Public Health Impacts From the MBPP's $PM_{2.5}$ Emissions.

Both Duke and Staff maintain there will be no significant adverse health impacts from the increase in $PM_{2.5}$ emissions and resulting increase in local concentrations that will occur with the new MBPP as proposed by Duke. That simply is not the case. This subject is likewise addressed extensively in CAPE's Opening Brief III (§II.B). CAPE addresses here only specific points raised in Staff's Opening Brief III on this issue.

Staff maintains that a CEQA analysis of PM_{10} public health impacts should be measured for the MBPP as a whole, without any reduction or "credit" for the elimination of the existing plant's PM_{10} emissions.[73] CAPE agrees with this; CAPE's approach by its expert witnesses and in the Children's Report and Other Impacts Report[74] was to offer an overly "conservative" (i.e., understated) estimate of the severe adverse health impacts resulting from the MBPP's $PM_{2.5}$ emissions to counter or offset the claims of conservatism by Duke and Staff with respect to the ISC modeling. Staff specifically cites a figure of a 1.34 $\mu g/m^3$ annual increased impact in the downtown area of Morro Bay,[75] which it describes as "very low."

That ignores the findings of literally thousands of public health studies demonstrating that severe adverse health impacts, including premature mortality, are

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[73] Mr. Ringer, 3/12/02 RT 16:2-8. *See also* Staff's Opening Brief III, §II, p. 6 (1st ¶), which references the modeled emissions from the new MBPP, without adjustment.

[74] Exhibit 139, Hartman Declaration, Soderbeck Declaration, and Attachments A and B thereto.

[75] Staff's Opening Brief III, §II, p. 6 (1st ¶).

associated with any increase in PM_{10} and/or $PM_{2.5}$ exposures.[76] The Levy and Spengler study[77] specifically notes there is "an approximate 0.5% increase in premature mortality rates per $\mu g/m^3$ increase in annual mean $PM_{2.5}$ concentrations,"[78] based on cohort study findings. It is critical to understand that for PM, unlike other criteria pollutants, there is no threshold below which increased exposures have no adverse health impacts.[79] This means a 1 $\mu g/m^3$ $PM_{2.5}$ increase against a background level of 20 $\mu g/m^3$ has the same if not greater impact as a 1 $\mu g/m^3$ increase against a background level of 90 $\mu g/m^3$.[80]

Staff chooses to ignore this absence of threshold effects, however, because "the studies indicate that an association between PM_{10} health effects and health impacts is stronger at the higher levels of PM_{10} concentrations and weaker at lower levels. (2/6/02 RT, p. 79)."[81] This is totally inappropriate under a CEQA analysis. Regardless of the *relative* strengths of the association, that association has been demonstrated repeatedly even at low levels of increases. A conservative analysis protective of human health impacts must in fact be conservative, not dismissive of demonstrated associations.

Staff goes on to conclude, against the massive evidence to the contrary, that adding a small increment of $PM_{2.5}$ concentrations will not result in any increase in morbidity or mortality because Morro Bay has relatively clean air.[82] The scientific literature clearly demonstrates that even in cities with relatively low ambient background concentrations of PM, the relationship between small increased exposures to PM_{10} and $PM_{2.5}$ holds.[83] It is not acceptable to ignore potentially very severe health effects arising from the MBPP's emissions just because Morro Bay has cleaner air than many other places in California. The goal is not make every city equally dirty in $PM_{2.5}$ pollution. In

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[76] *See, e.g.*, Exhibit 139, Twersky-Bumgardner Declaration and attachments, Hartman Declaration and attachments, and Soderbeck Declaration and attachments; Exhibit 184, CARB Draft Report.

[77] Exhibit 182.

[78] *Id.*, pp. 10-11.

[79] Exhibit 139, Soderbeck Declaration, Attachment B - Other Impacts Report, pp. 21-24; Exhibit 184, CARB Draft Report, §7.3.5, pp. 130-131; CAPE Opening Brief III, § II.B.2.

[80] Exhibit 139, Soderbeck Declaration, Attachment B - Other Impacts Report, pp. 22-23, citing Schwartz, et al. (2000) which is attached as Study # 18.

[81] Staff's Opening Brief III, §II, p. 7, lines 3-5.

[82] *Id.*, lines 5-7.

[83] *See, e.g.*, Exhibit 139, Soderbeck Declaration, Attachment B - Other Impacts Report, p. 22.

fact, under the proposed new PM_{10} standard, Morro Bay exceeded the 20 $\mu g/m^3$ annual geometric mean PM_{10} standard in both 1997 and 2000.[84]

Remarkably, Staff then proceeds to argue that the CARB Draft Report[85] supports its conclusion, citing the report's recommended lowering of the PM_{10} annual standard and the addition of a new annual $PM_{2.5}$ standard. "The Report also recommended that in areas where the proposed standards are met, the air quality should not be further degraded. (*id*. at 3)"[86] That supports CAPE's position, not the Staff's.

Staff misleadingly cites the testimony by Mr. Willey of the APCD that Morro Bay is expected to meet the new standards[87] and that the general air quality trend for ambient PM_{10} concentrations is downward.[88] Staff well knows, however, that these statements were erroneous when made. In fact, upon cross-examination by CAPE, Mr. Willey indicated that he had rechecked the figures used by Duke in its AFC and related filings[89] and the arithmetic and geometric means for PM_{10} ambient concentrations in Morro Bay had been reversed by Duke. Thus, Morro Bay would not in fact meet the new standards. The so-called "downward" trend is also belied by the correct figures for the annual mean of PM_{10} in Morro Bay showing an increase from 1998 (14.6 $\mu g/m^3$) to 21.4 $\mu g/m^3$ in 2000. These testimonial errors do not constitute substantial evidence supporting Staff's and Duke's position.

Even using the 1.34 $\mu g/m^3$ increase in $PM_{2.5}$ concentrations in downtown Morro Bay which is noted by Staff, this would result in an approximate 0.67% increase in mortality risk.[90] This is indeed quite significant although the absolute number may appear to be "low," because it is a very severe adverse health effect, i.e., early death. Even under the HRA analyses of TACs, the risk of getting (not dying from) cancer is

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84 CAPE's Opening Brief III, p. 21, note 82.

85 Exhibit 184.

86 Staff's Opening Brief III, §II, p. 7 (2nd ¶).

87 2/6/02 RT 59:20-24.

88 2/6/02 RT 61:4-9.

89 Exhibit 4, AFC, §6.2.1.1, Table 6.2-1, p. 6.2-4; Exhibit 34, Duke's Response to CAPE's March 9, 2001 Data Request No. 26, Table 6.2-37 Revised.

90 Of course, Dr. Walther conveniently understated the annual effects in the community from the MBPP's PM_{10} by a factor of more than 10 to 20. 2/5/02 RT 193:7-21.

deemed significant at a 1 in 1,000,000 level and would stop the Project at a 10 in 1,000,000 level. As Mr. Hartman's and Ms. Soderbeck's analyses showed, the increased annual and lifetime mortality risk for just the over 30 subpopulation in Morro Bay from increased emissions of this level exceeds these HRA significance levels substantially.[91] Other areas excluding Morro Rock have substantially larger increases in modeled $PM_{2.5}$ concentrations than 1.34 μgm^3. Moreover, this analysis does not take into account the extraordinarily high levels of susceptible populations in Morro Bay.[92]

When the same type of (or more dire) health consequences can occur from a specific criteria pollutant, i.e., PM_{10} (which includes $PM_{2.5}$), that occurs from TAC exposures, the same extreme conservatism should be used as is used in an HRA analysis. Instead of doing so, both Duke and Staff are improperly dismissing the severity of the demonstrated health effects associated with even small increases in $PM_{2.5}$ exposure. That is the antithesis of what CEQA requires.

Staff in effect ignores the vast evidence provided by CAPE of the significant adverse health effects caused by increased $PM_{2.5}$ exposures that occur well below the current ambient PM_{10} standards, noting the "project area has experienced only one violation of these standards during the past seven years …," which was attributable to a fire in the area.[93] This is a true statement, but simply not relevant in light of the evidence that adverse health impacts occur at much lower levels and CEQA requires an analysis of those effects that occur even below state standards.[94]

These severe adverse health consequences from the MBPP's $PM_{2.5}$ emissions and resulting concentrations are not fully mitigated by the ERCs proposed by

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[91] Exhibit 139, Hartman Declaration and attachments; Ms. Soderbeck, 3/12/02 RT 100:8-22.

[92] Exhibit 139, Soderbeck Declaration, Attachment B - Other Impacts Report, p. 6, and attached study # 11 by Mar et al., "Associations between air pollution and mortality in Phoenix, 1995-1997," which noted that a 9.7 % elderly population in Phoenix was considered unusually high. Morro Bay's elderly population is 24 %.

[93] Staff's Opening Brief III, §II, p. 6.

[94] *See* CAPE's Opening Brief III, §II.B.2, pp. 22-24. This argument by Staff is somewhat odd in any event because Mr. Badr testified that Staff does not treat the occurrence of a new violation any differently than it does a contribution to an existing violation. Even if the single 24-hour exceedance in 1997 had not occurred, the MBPP would result in new violations of that standard, even excluding Morro Rock (e.g., 47 $\mu g/m^3$ in 2000 plus 10.1 $\mu g/m^3$ [the maximum excluding Morro Rock] = 57.1 $\mu g/m^3$.

Duke. Staff's position here is that the ERCs will mitigate the adverse effects simply because they are from the same location as the new facility and from the same type (i.e., combustion) activity.[95] This ignores that the ERCs obtained will nonetheless allow for actual increased *concentrations* of $PM_{2.5}$ in Morro Bay, which is the cause of the adverse health impacts. The ERCs are intended to satisfy long-term regional mitigation but do not result in real offsets of actual increases in local ambient concentrations.[96] This is particularly true when more than half of the ERCs are mere paper mitigation.

As discussed in greater detail in CAPE's Opening Brief III,[97] 51% of the ERCs proposed by Duke are from the 1995 cessation of oil burning at the existing plant and there is a further shortfall of ERCs when an appropriate baseline is used to calculate ERCs from the shutdown of the existing plant upon construction of the new MBPP. Staff clearly made no independent CEQA analysis of the ERCs, apart from simply accepting the District's analysis under its own regulations.[98]

The APCD's analysis allowed Duke to take ERCs for the oil cessation simply because it had the theoretical legal right to burn oil again after January 1, 2003. That right is illusory, however, because with the new NOx emission limits in effect as of that date, the existing plant could not resume burning oil at all and meet those requirements, and even with extensive retrofitting could not have resumed burning oil at anything remotely close to the levels burned in 1995.[99] Moreover, it is irrelevant for a CEQA mitigation analysis that the District's decision on the banking of those credits was not challenged earlier. There are different considerations under CEQA and the District's rules and the District does not itself make a CEQA analysis at all. It is clear that Staff cannot delegate its CEQA responsibilities to another agency, particularly when that other agency does not even pretend to make CEQA determinations.

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[95] Staff's Opening Brief III, §II, p. 6 (last ¶).

[96] CAPE's Opening Brief III, §II.C.2, pp. 37-38.

[97] CAPE's Opening Brief III, §II.C.4, pp. 41-44. A typographical error should noted on the table on page 43 as to *** note, which should say: "These figures are reduced if *VOC/*CO residual ERCs …"

[98] Staff's Opening Brief III, §I, pp. 4-5.

[99] CAPE's Opening Brief III, §II.C.4, pp. 41-42.

Contrary to Mr. Ringer's testimony on behalf of Staff,[100] there is no clear nexus between the ERC offsets being offered by Duke and the impacts being caused by the increased $PM_{2.5}$ concentrations in Morro Bay, even though most of the regional ERCs result from the existing plant (either through cessation of oil burning or its shutdown with the new MBPP). Such a nexus is required under CEQA and a failure to analyze where actual reductions in impacts occur makes an EIR inadequate. *See Save Our Peninsula, supra,* 87 Cal.App.4th 99, 104 Cal.Rptr.2d 326, 348 (absence of nexus between proposed water offsets and actual project impacts). Here the local concentrations are nonetheless increasing even with the ERCs from the existing plant because there is both a significant increase in $PM_{2.5}$ emissions with the new MBPP, because more of those emissions are staying local as a result of the lower stacks, exhaust velocity and exhaust heat with the new MBPP, and because the oil ERCs in effect bring back dirty air that disappeared locally in 1995. Staff acknowledges this,[101] but declines to seek mitigation for these impacts, which is improper. Staff has no evidence on which to base its conclusion that the regional ERCs are in fact real or that such ERCs will in fact offset the very severe adverse health impacts that result from even small increases in $PM_{2.5}$ concentrations.

D. Staff Failed to Consider All Feasible Mitigation Measures for the Impacts of $PM_{2.5}$ Emissions From the MBPP.

As is clear from Staff's Opening Brief III (§II) and its testimony,[102] Staff did not consider any mitigation measure beyond the regional ERCs. This is inappropriate. CEQA requires a consideration of all feasible mitigation measures. Pub. Resources Code § 21002; CEQA Guidelines § 15126.4(a)(1)(B). Even though not every imaginable mitigation measure need be considered,[103] feasible mitigation means must be analzyed. Feasible is defined in Pub. Resources Code § 21061.1 and Guideline § 15364 as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors."

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100 2/6/02 81:21-25; 83: 6-9.

101 Mr. Ringer, 2/6/02 RT 84:3-5.

102 Mr. Badr, 2/6/02 RT 89:14-90:2; 3/12/02 RT 44:3-47:8.

> In keeping with the statute and guidelines, an adequate EIR must respond to specific suggestions for mitigating a significant environmental impact unless the suggested mitigation if facially infeasible. [Citations] While the response need not be exhaustive, it should evince good faith and a reasoned analysis. [Citations]

LAUSD, supra, 58 Cal.App.4th 1019, 1029, 68 Cal.Rptr.2d 367, 373.

In that case, the EIR was found inadequate because it did not address specific suggested mitigation to certain air impacts (i.e., air conditioning and filtering in a nearby school). The applicant also argued unsuccessfully that the EIR need not address mitigation measures that only partially mitigate significant adverse effects (i.e., indoor air quality at the school vs. outdoor air quality in general). The court responded:

> CEQA, however, does not speak in terms of absolute avoidance of environmental effects but of mitigation measures "which would substantially lessen the significant effects of proposed projects." ([Pub. Resources Code] § 21002). The EIR before us does not address the question whether air conditioning and filtration would "substantially lessen" the impact of air pollution on the schools and is, therefore, inadequate.

58 Cal.App.4th 1019. 1031, 68 Cal.Rptr.2d 367, 374-375.

Applying this reasoning here, as explained above and in CAPE's Opening Brief III, Staff is in error in concluding that the increased local $PM_{2.5}$ concentrations in Morro Bay are not significant adverse health impacts. The Staff further erred in not considering specific feasible mitigation measures that could substantially lessen those localized impacts, *even if not fully offsetting them*.[104] Staff did not consider additional local ERCs or elimination of duct burning or any other design change in its mitigation analysis in the FSA Part I (§3.1). This is inadequate under CEQA.

E. Staff's Argument That CAPE's Proposed Mitigation Would Prevent Any Project Approval Is Incorrect.

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[103] *See LAUSD, supra*, 58 Cal.App.4th 1019, 1029, 68 Cal.Rptr.2d 367, 373.

[104] Mr. Badr, 2/6/02 RT 89:14-90:2; 3/12/02 RT 44:3-47:8. Staff did not address *any* feasible mitigation measures other than ERCs and its faulty conclusion regarding the actual mitigation impacts of such ERCs compared to the actual adverse impacts resulting from increased local $PM_{2.5}$ concentrations.

Staff declares CAPE's recommended mitigation measure (see proposed **AQ-57** in CAPE's Opening Brief III (§II.C.7)) as "clearly unworkable."[105] CAPE asserts this proposed **AQ-57** is insufficient under the proper CEQA analysis described by Staff that there should be no significant increases in adverse health impacts from the MBPP without any offset of emissions from the existing plant. **AQ-57** should be adjusted accordingly. Under Staff's analysis, the impacts from the increased local $PM_{2.5}$ concentrations should in fact be fully mitigated. The proposed **AQ-57** suggests at least five specific ways in which that could be accomplished, at least in part, thereby demonstrating that this Project could in fact go forward with further mitigation.

Staff prefers to simply ignore the severe adverse effects arising from increases in local $PM_{2.5}$ concentrations, blithely considering only regional mitigation issues, while arguing that CAPE's position ignores the regional "benefits" from ERCs. The problem is that under CEQA both regional and local impacts must be considered and mitigated appropriately, not just one at the expense of the other.

The elimination of duct burning as a Project alternative will be addressed by CAPE in the traditional Alternatives analysis as part of the Group IV Topics.

F. Duke's Rebuttal Position on PM_{10} Health Impacts Is Without Merit.

Duke addresses CAPE's position on the severe adverse health impacts from the MBPP's $PM_{2.5}$ emissions and resulting increased concentrations by reiterating the rebuttal testimony of Dr. Walther and Mr. Rubenstein.[106] These arguments were refuted by CAPE in its Opening Brief III.[107]

Duke goes to great lengths to deliberately mischaracterize Mr. Hartman and Ms. Soderbeck's testimony regarding the relevance of the Levy and Spengler study.[108] It is clear both CAPE witnesses cited this study as one in which the epidemiological literature evidencing severe adverse $PM_{2.5}$ health impacts was applied to the analysis of adverse health impacts arising from two specific power plants (that were

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105 Staff's Opening Brief III, §II, p. 8 (3rd ¶).
106 Duke's Opening Brief III, §II.F, pp. 3-16 - 3-21.
107 CAPE's Opening Brief III, §II.B.4, pp. 31-36.

"grandfathered" from certain BACT requirements in Massachusetts). These witnesses never testified nor implied that the specific emissions of those plants in any way correlated to the MBPP. That would be clearly absurd – the study involved *coal* power plants, whereas the MBPP will utilize natural gas combined cycle turbines.

Besides the use of the epidemiological studies' findings to estimate anticipated health impacts from PM,[109] the Levy and Spengler study is enlightening in connection with the MBPP Project in other ways as well, in that it confirms that:

1. The health literature on $PM_{2.5}$ does not provide evidence of a population threshold (specifically noting a recent Health Effects Institute analysis that found no evidence of a $PM_{2.5}$ threshold at annual average ambient concentrations evaluated in that study of 10 to 38 $\mu g/m^3$);[110]

2. Even a small reduction in ambient concentrations can have significant health benefits (i.e., reduce adverse health impacts);[111]

3. Near-source contributions of $PM_{2.5}$ to adverse health consequences is more substantial for primary $PM_{2.5}$ (such as the MBPP emissions) than for secondary $PM_{2.5}$ (which Staff has indicated will be negligible from the MBPP);[112] and

4. Any error that may arise as a result of differences between actual versus monitored ambient concentration and individual personal exposure either do not bias concentration-response functions or would induce a bias most likely underestimating the effect.[113]

Once again Duke argues that the PM_{10} and $PM_{2.5}$ studies cited by CAPE have no application outside of their own unique "domain," which is not Morro Bay. This

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[108] Exhibit 182; see CAPE's Opening Brief III, p. 32, note 128.

[109] Although the Levy and Spengler study focused on the health impacts from secondary PM (resulting from precursors NOx and SOx), the study did note that a further benefit from imposing the recommended BACT controls was to also reduce primary PM concentrations, resulting in an additional 10 fewer deaths per year (13% increase in lives saved) with the BACT control in place. Exhibit 182, p. 14. In the case of natural gas-fired plants there are significantly higher benefits from curtailing primary $PM_{2.5}$ because there is much less secondary PM_{10} than there is with a coal-fired plant.

[110] Exhibit 182, p. 11.

[111] Exhibit 182, p. 16.

[112] Exhibit 182, p. 14.

[113] Exhibit 182, p. 10.

is simply wrong. The very robustness of what Duke denigrates as "only general mathematical relationships between ambient levels of air pollution and health effects,"[114] lies in the incredible consistency of the thousands of individual "domains" studied that show the same overall relationship between resulting adverse health effects, including premature mortality, and the ambient concentration of $PM_{2.5}$ or PM_{10}. Relying solely on what Duke describes as its "Morro-Bay specific" analysis, which makes no consideration of the well-documented adverse health consequences that occur below the current California PM_{10} standards, is wholly unacceptable under CEQA because it blatantly ignores these obvious significant adverse health impacts.

Duke relies heavily on Dr. Walther's opinion that because there are a variety of different chemical components in the ambient PM studies in all of the epidemiological studies, the results are somehow inapplicable to the primarily carbon and sulfate combustion $PM_{2.5}$ particles that will be emitted by the MBPP.[115] That opinion appears to be a biased one, convenient to Duke's position here, but without substantial basis in science or fact.

Indeed, the independent experts who prepared the CARB Draft Report touted the robustness of the findings from "studies [that] have been conducted in a wide range of cities on five continents, *with differing PM sources,* climates, seasonal patterns, co-pollutants, and population characteristics." [Emphasis added][116] In other words, the same findings involving differing mixtures of PM is a strength, not a weakness. Moreover, with respect to studies outside California which were relied upon, the CARB Draft Report emphasizes the "generalizability of the results of these studies, *although the sources and mix of PM constituents,* the underlying population health characteristics, and the exposure patterns may be different from those in California." [Emphasis added][117] This clearly contradicts Dr. Walther's view that these epidemiological studies are

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[114] Duke's Opening Brief III, p. 3-18, lines 33-34.

[115] Recent studies utilizing EPA Superstation test facilities which speciated the chemical profile of ambient $PM_{2.5}$ found the same risk ratio for the carbon component as for total $PM_{2.5}$. See, CAPE's Opening Brief III, p. 33 (2nd ¶).

[116] Exhibit 184, CARB Draft Report, §7.11.1, p. 175, lines 4-6.

inapplicable outside the specific domain in which they were developed. As was also discussed in CAPE's Opening Brief III (§II.B.4, p. 34), the Staff's analysis also assumes that all combustion particles have the same basic characteristics.[118] These studies present the best information available and should be used to consider the level of anticipated adverse health impacts that will arise from the MBPP.

Finally, Duke argues that CAPE's analysis which considered the maximum modeled $PM_{2.5}$ concentrations exclusive of Morro Rock was flawed because it assumes that all 10,000 people in Morro Bay receive that exposure. This is absolutely reasonable, however, given the fact that: (a) actual emission rates are understated by a factor of two; (b) the modeling typically overstates actual concentrations by a factor of two; and (c) analysis of severe adverse health impacts (here premature death, which is a more severe outcome than the risk of getting cancer, which most people survive) requires highly conservative assumptions, much more conservative than is suggested by CAPE's analysis.

G. It Is Critical to Add CAPE's Requested General Condition Requiring Recertification in 30 Years to Fully Mitigate the Significant Adverse Impacts of $PM_{2.5}$ From the MBPP.

In its Opening Brief II, CAPE specifically requested an additional General Condition requiring recertification of the MBPP after 30 years of operations (the Project lifetime put forth by Duke and considered in Staff's analyses).[119] Air quality is an even more obvious area requiring future reanalysis of the MBPP's impacts after operating for 30 years. Although not a CEC approved project, the cogeneration plant at issue in *Kings County, supra,* 221 Cal.App.3d 692, 270 Cal.Rptr. 650, 674, was required to undergo further environmental review through a new EIR if the plant wanted to operate beyond its existing 20-year PG&E contract. This was because the court found that future environmental impacts (including air quality impacts) were too speculative beyond that 20-year period. That is the case here as well.

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[117] *Id.*, §7.11.4.1, p. 183, lines 7-9.

[118] Mr. Ringer 2/6/02 RT 81:6-20; Mr. Badr, 2/6/02 RT 89:20-90:2; 102:20-103:9.

CAPE fully recognizes that, as Staff states, the "Commission … retains jurisdiction over facilities it licenses, and has the authority to require additional mitigation should project emissions exceed those used as a basis for the Commission's decision."[120] That is indeed sufficient for actual observed violations. The problem, however, is that the health literature as it has become more sophisticated in recent years has found significant adverse health effects from PM_{10} and $PM_{2.5}$, for example, at lower and lower exposure levels and more research will be occurring to determine which of the chemical components of PM are the most deadly. Moreover, all of the literature on the adverse health impacts from PM exposure supports even greater chronic (i.e., cumulative) risks over time.[121] The Commission has no authority of which CAPE is aware to require further mitigation for these impacts that may result if the permitted emission rates were not exceeded. A subsequent review of the adverse health impacts from the MBPP in 30 years would allow the Commission to address this problem as well as the obvious problem of equipment becoming more polluting as it ages.

III. LAND USE

As set forth in CAPE's Opening Brief III (§II.D), there are at least two local Morro Bay LORS that will be violated by the MBPP as proposed, which have neither been addressed nor investigated by Duke or by Staff. Duke's casual dismissal of CAPE's position on CLUP 5.22[122] totally ignores that different air pollutant emissions have wholly different standards and health risks, making it meaningless to interpret the phrase "air emissions be maintained" as referencing "emissions generally." Clearly not all types of emissions have the same consequences[123] and the emissions that are increasing the most with the MBPP are the deadliest, i.e., $PM_{2.5}$.

IV. VISUAL RESOURCES

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119 CAPE's Opening Brief II, §II.A, p. 5.
120 Staff's Opening Brief III, §I, note 3, p. 5.
121 Exhibit 139, Soderbeck Declaration, Attachments A and B; Exhibit 184, CARB Draft Report.
122 Duke's Opening Brief III, §IV.B, p. 3-29, note 7.
123 Exhibit 139, Soderbeck Declaration, Attachment A - Children's Report, pp. 10. 16.

Staff continues to support that portion of **VIS-1** relating to partial enclosure and to require analysis of partial screening once Duke is further along in the design process.[124] Duke opposes this requirement.[125] CAPE strongly supports Staff's position.

V. CONCLUSION

As set forth above and in CAPE's Opening Brief III, the arguments relating to CAPE's positions made by Staff and by Duke in their respective Opening Briefs III are unsupported by the law or the evidence and their analyses of Group II topics (Air Quality, Public Health, and Land Use) remain inadequate. CAPE strongly urges the Committee to require further analysis as described by CAPE and to adopt the modifications to COCs and additional COCs proposed by CAPE. CAPE also urges the Committee to deny the City's request to modify virtually all of the **AQ** COCs in such a manner as to allow the City oversight and approval authority over air quality protocols and requirements as to which it has demonstrated absolutely no expertise, knowledge or technical background.

[124] Staff's Opening Brief III, §III, p. 13 (last ¶) and **VIS-1** set forth in Attachment A to the brief.
[125] Duke's Opening Brief III, §V.B, pp. 3-39 - 3-43.

Respectfully submitted,

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